

## PCT INTERNATIONAL COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BOEHMERT & BOEHMERT  
Hollerallee 32  
D-28207 Bremen  
ALLEMAGNEDate of mailing (day/month/year)  
06 February 2001 (06.02.01)Applicant's or agent's file reference  
DD2904PCT

## IMPORTANT NOTIFICATION

International application No.  
PCT/DE00/00553International filing date (day/month/year)  
24 February 2000 (24.02.00)

## 1. The following indications appeared on record concerning:

☒

the applicant

☐

the inventor

☐

the agent

☐

the common representative

## Name and Address

FLABEG GMBH  
Siemensstrasse 3  
D-90766 Fürth  
Germany

State of Nationality

DE

State of Residence

DE

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒

the person

☐

the name

☐

the address

☐

the nationality

☐

the residence

## Name and Address

FLABEG GMBH & CO. KG  
Siemensstrasse 3  
D-90766 Fürth  
Germany

State of Nationality

DE

State of Residence

DE

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

☒

the receiving Office

☐

the designated Offices concerned

☐

the International Searching Authority

☒

the elected Offices concerned

☒

the International Preliminary Examining Authority

☐

other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Dorothee Mülhausen

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38



## PATENT COOPERATION TREATY

9

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 06 November 2000 (06.11.00)	
<b>International application No.</b> PCT/DE00/00553	<b>Applicant's or agent's file reference</b> DD2904PCT
<b>International filing date</b> (day/month/year) 24 February 2000 (24.02.00)	<b>Priority date</b> (day/month/year) 01 March 1999 (01.03.99)
<b>Applicant</b> JÖDICKE, Dirk et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 23 September 2000 (23.09.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer R. Forax Telephone No.: (41-22) 338.83.38
--	--



VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT  
AUF DEM GEBIET DES PATENTWESENS

# PCT

## INTERNATIONALER RECHERCHENBERICHT

(Artikel 18 sowie Regeln 43 und 44 PCT)

Aktenzeichen des Anmelders oder Anwalts <b>DD2904PCT</b>	<b>WEITERES VORGEHEN</b> siehe Mitteilung über die Übermittlung des internationalen Recherchenberichts (Formblatt PCT/ISA/220) sowie, soweit zutreffend, nachstehender Punkt 5	
Internationales Aktenzeichen <b>PCT/DE 00/ 00553</b>	Internationales Anmeldedatum (Tag/Monat/Jahr) <b>24/02/2000</b>	(Frühestes) Prioritätsdatum (Tag/Monat/Jahr) <b>01/03/1999</b>
Anmelder  <b>FLABEG GMBH et al.</b>		

Dieser internationale Recherchenbericht wurde von der Internationalen Recherchenbehörde erstellt und wird dem Anmelder gemäß Artikel 18 übermittelt. Eine Kopie wird dem Internationalen Büro übermittelt.

Dieser internationale Recherchenbericht umfaßt insgesamt 3 Blätter.

☒ Darüber hinaus liegt ihm jeweils eine Kopie der in diesem Bericht genannten Unterlagen zum Stand der Technik bei.

### 1. Grundlage des Berichts

a. Hinsichtlich der **Sprache** ist die internationale Recherche auf der Grundlage der internationalen Anmeldung in der **Sprache** durchgeführt worden, in der sie eingereicht wurde, sofern unter diesem Punkt nichts anderes angegeben ist.

☐ Die internationale Recherche ist auf der Grundlage einer bei der Behörde eingereichten Übersetzung der internationalen Anmeldung (Regel 23.1 b)) durchgeführt worden.

b. Hinsichtlich der in der internationalen Anmeldung offenbarten **Nucleotid- und/oder Aminosäuresequenz** ist die internationale Recherche auf der Grundlage des Sequenzprotokolls durchgeführt worden, das

☐ in der internationalen Anmeldung in schriftlicher Form enthalten ist.

☐ zusammen mit der internationalen Anmeldung in computerlesbarer Form eingereicht worden ist.

☐ bei der Behörde nachträglich in schriftlicher Form eingereicht worden ist.

☐ bei der Behörde nachträglich in computerlesbarer Form eingereicht worden ist.

☐ Die Erklärung, daß das nachträglich eingereichte schriftliche Sequenzprotokoll nicht über den Offenbarungsgehalt der internationalen Anmeldung im Anmeldezeitpunkt hinausgeht, wurde vorgelegt.

☐ Die Erklärung, daß die in computerlesbarer Form erfaßten Informationen dem schriftlichen Sequenzprotokoll entsprechen, wurde vorgelegt.

2. ☐ Bestimmte Ansprüche haben sich als nicht recherchierbar erwiesen (siehe Feld I).

3. ☐ Mangelnde Einheitlichkeit der Erfindung (siehe Feld II).

### 4. Hinsichtlich der Bezeichnung der Erfindung

☒ wird der vom Anmelder eingereichte Wortlaut genehmigt.

☐ wurde der Wortlaut von der Behörde wie folgt festgesetzt:

### 5. Hinsichtlich der Zusammenfassung

☒ wird der vom Anmelder eingereichte Wortlaut genehmigt.

☐ wurde der Wortlaut nach Regel 38.2b) in der in Feld III angegebenen Fassung von der Behörde festgesetzt. Der Anmelder kann der Behörde innerhalb eines Monats nach dem Datum der Absendung dieses internationalen Recherchenberichts eine Stellungnahme vorlegen.

6. Folgende Abbildung der **Zeichnungen** ist mit der Zusammenfassung zu veröffentlichen: Abb. Nr. 1

☒ wie vom Anmelder vorgeschlagen

☐ keine der Abb.

☐ weil der Anmelder selbst keine Abbildung vorgeschlagen hat.

☐ weil diese Abbildung die Erfindung besser kennzeichnet.

22

1

# INTERNATIONAL SEARCH REPORT

Inte. onal Application No

PCT/DE 00/00553

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G02F1/161 G02F1/15

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 761 061 A (NISHIYAMA HISASHI ET AL) 2 August 1988 (1988-08-02)	1-3,7,9
Y	column 10, line 5 - line 31 column 8, line 52 - column 9, line 21 column 4, line 36 - line 41 column 11, line 56 - column 12, line 4; figure 1	11,12
A	US 5 122 896 A (MIZUSAKI YASUSHI ET AL) 16 June 1992 (1992-06-16) column 4, line 31 - line 38	1
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 166 (P-1514), 30 March 1993 (1993-03-30) & JP 04 328723 A (TONEN CORP), 17 November 1992 (1992-11-17) abstract; figures 1,3	1

-/--

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

19 May 2000

Date of mailing of the international search report

26/05/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Stang, I





# INTERNATIONAL SEARCH REPORT

International Application No

PCT/DE 00/00553

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 836 932 A (NORTON PERFORMANCE PLASTICS S ; SAINT GOBAIN VITRAGE (FR)) 22 April 1998 (1998-04-22) cited in the application	11
A	page 5, line 41 - line 55 page 5, line 5 - line 12 page 4, line 12 - line 14 page 7, line 10 - line 11 page 10, line 47 - page 11, line 12; figure 1	8, 10
Y	EP 0 683 215 A (FLACHGLAS AG) 22 November 1995 (1995-11-22) cited in the application page 1, line 22 - line 31 page 4, line 46 - page 5, line 54	12



# INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte: onal Application No

PCT/DE 00/00553

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4761061 A	02-08-1988	JP 62070819 A JP 62070820 A	01-04-1987 01-04-1987
US 5122896 A	16-06-1992	JP 2042893 C JP 2093434 A JP 7060235 B	09-04-1996 04-04-1990 28-06-1995
JP 04328723 A	17-11-1992	NONE	
EP 0836932 A	22-04-1998	FR 2754848 A FR 2757737 A JP 10193517 A US 6001487 A	24-04-1998 26-06-1998 28-07-1998 14-12-1999
EP 0683215 A	22-11-1995	DE 4417220 A DE 4417219 A WO 9531746 A EP 0723675 A JP 9500739 T US 6020423 A US 5859723 A	23-11-1995 07-12-1995 23-11-1995 31-07-1996 21-01-1997 01-02-2000 12-01-1999



4

5

# INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/DE 00/00553

## A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES

IPK 7 G02F1/161 G02F1/15

Nach der Internationalen Patentklassifikation (IPK) oder nach der nationalen Klassifikation und der IPK

## B. RECHERCHIERTE GEBIETE

Recherchierte Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)

IPK 7 G02F

Recherchierte aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)

## C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
X	US 4 761 061 A (NISHIYAMA HISASHI ET AL) 2. August 1988 (1988-08-02)	1-3,7,9
Y	Spalte 10, Zeile 5 - Zeile 31 Spalte 8, Zeile 52 - Spalte 9, Zeile 21 Spalte 4, Zeile 36 - Zeile 41 Spalte 11, Zeile 56 - Spalte 12, Zeile 4; Abbildung 1	11,12
A	US 5 122 896 A (MIZUSAKI YASUSHI ET AL) 16. Juni 1992 (1992-06-16) Spalte 4, Zeile 31 - Zeile 38	1
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 166 (P-1514), 30. März 1993 (1993-03-30) & JP 04 328723 A (TONEN CORP), 17. November 1992 (1992-11-17) Zusammenfassung; Abbildungen 1,3	1

-/--

☒ Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen

☒ Siehe Anhang Patentfamilie

\* Besondere Kategorien von angegebenen Veröffentlichungen :

"A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist

"E" älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist

"L" Veröffentlichung, die geeignet ist, einen Prioritätsanspruch zweifelhaft erscheinen zu lassen, oder durch die das Veröffentlichungsdatum einer anderen im Recherchenbericht genannten Veröffentlichung belegt werden soll oder die aus einem anderen besonderen Grund angegeben ist (wie ausgeführt)

"O" Veröffentlichung, die sich auf eine mündliche Offenbarung, eine Benutzung, eine Ausstellung oder andere Maßnahmen bezieht

"P" Veröffentlichung, die vor dem internationalen Anmeldedatum, aber nach dem beanspruchten Prioritätsdatum veröffentlicht worden ist

"T" Spätere Veröffentlichung, die nach dem internationalen Anmeldedatum oder dem Prioritätsdatum veröffentlicht worden ist und mit der Anmeldung nicht kollidiert, sondern nur zum Verständnis des der Erfindung zugrundeliegenden Prinzips oder der ihr zugrundeliegenden Theorie angegeben ist

"X" Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann allein aufgrund dieser Veröffentlichung nicht als neu oder auf erfinderischer Tätigkeit beruhend betrachtet werden

"Y" Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann nicht als auf erfinderischer Tätigkeit beruhend betrachtet werden, wenn die Veröffentlichung mit einer oder mehreren anderen Veröffentlichungen dieser Kategorie in Verbindung gebracht wird und diese Verbindung für einen Fachmann naheliegend ist

"&" Veröffentlichung, die Mitglied derselben Patentfamilie ist

Datum des Abschlusses der internationalen Recherche

19. Mai 2000

Abschließdatum des internationalen Recherchenberichts

26/05/2000

Name und Postanschrift der Internationalen Recherchenbehörde  
Europäisches Patentamt, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Bevollmächtigter Bediensteter

Stang, I



# INTERNATIONALER RECHERCHENBERICHT

Inte Ionales Aktenzeichen

PCT/DE 00/00553

## C.(Fortsetzung) ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
Y	EP 0 836 932 A (NORTON PERFORMANCE PLASTICS S ; SAINT GOBAIN VITRAGE (FR)) 22. April 1998 (1998-04-22) in der Anmeldung erwähnt	11
A	Seite 5, Zeile 41 - Zeile 55 Seite 5, Zeile 5 - Zeile 12 Seite 4, Zeile 12 - Zeile 14 Seite 7, Zeile 10 - Zeile 11 Seite 10, Zeile 47 -Seite 11, Zeile 12; Abbildung 1	8,10
Y	EP 0 683 215 A (FLACHGLAS AG) 22. November 1995 (1995-11-22) in der Anmeldung erwähnt Seite 1, Zeile 22 - Zeile 31 Seite 4, Zeile 46 -Seite 5, Zeile 54	12





# INTERNATIONALER RECHERCHENBERICHT

Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen

PCT/DE 00/00553

Im Recherchenbericht angeführtes Patentdokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
US 4761061 A	02-08-1988	JP 62070819 A	01-04-1987
		JP 62070820 A	01-04-1987
US 5122896 A	16-06-1992	JP 2042893 C	09-04-1996
		JP 2093434 A	04-04-1990
		JP 7060235 B	28-06-1995
JP 04328723 A	17-11-1992	KEINE	
EP 0836932 A	22-04-1998	FR 2754848 A	24-04-1998
		FR 2757737 A	26-06-1998
		JP 10193517 A	28-07-1998
		US 6001487 A	14-12-1999
EP 0683215 A	22-11-1995	DE 4417220 A	23-11-1995
		DE 4417219 A	07-12-1995
		WO 9531746 A	23-11-1995
		EP 0723675 A	31-07-1996
		JP 9500739 T	21-01-1997
		US 6020423 A	01-02-2000
		US 5859723 A	12-01-1999





①⑨ **BUNDESREPUBLIK  
DEUTSCHLAND**



**DEUTSCHES  
PATENTAMT**

①⑫ **Gebrauchsmust r**  
①⑩ **DE 298 05 828 U 1**

⑤① Int. Cl.<sup>6</sup>:  
**H 04 Q 7/12**  
H 04 M 1/00  
// H04Q 7/32, G08B  
25/10

②① Aktenzeichen:	298 05 828.6
②② Anmeldetag:	31. 3. 98
④⑦ Eintragungstag:	23. 7. 98
④③ Bekanntmachung im Patentblatt:	3. 9. 98

⑦③ Inhaber:  
Mastnak, Wolfgang Richard, 86551 Aichach, DE

⑤④ Zweckgebundenes, mobiles Telekommunikationsgerät für Kinder + Jugendliche

**DE 298 05 828 U 1**

**DE 298 05 828 U 1**

Aichach, 24. März 1998

Wolfgang Richard M A S T N A K  
 Harthofstraße 19  
 86551 Aichach / Untergriesbach

Zweckgebundenes, mobiles Telekommunikationsgerät  
für Kinder und Jugendliche

5      Gegenstand der Erfindung ist ein mobiles Telekommunikationsgerät für Kinder und Jugendliche mit der Besonderheit, daß der Anwender nur nach vorher eingestellten Rufnummernkonfigurationen festgelegte Gesprächspartner erreichen kann.

10     Grundgedanke der Neuerung ist es, aufgrund zunehmender Gewaltdelikte an Kindern und Jugendliche, eine Möglichkeit der Verständigung - z.B. mit dem Elternhaus - zu schaffen. Damit ist erreichbar, daß das Kind oder der Jugendliche im Falle von Bedrängnissen oder anderen Notfällen unkompliziert in der Lage ist,  
 15     sich während des Schulweges oder in der Freizeit, bemerkbar zu machen, bzw. Hilfe herbeizuholen, falls keine örtliche Hilfe vorhanden oder in Sichtnähe ist.

Per Knopfdruck wird das Kind im Bedarfsfall mit dem häuslichen Telefon der Mutter oder des Vaters verbunden und kann  
 20     entsprechende Hilfe anfordern. Der Umkehrfall sieht vor, daß über das häusliche Telefon auch das Kind jederzeit erreichbar ist.

Leider leben wir in einer Gesellschaft, wo es nur wenigen Mitmenschen vorbehalten ist, die nötige Zivilcourage zu besitzen,  
 25     bei derartigen Beobachtungen spontane Hilfestellung für Kinder zu leisten.

Um so wichtiger ist es, unseren Kindern ein derartiges Hilfsmittel zur Verfügung zu stellen, daß in Funktion, Handhabung, Größe, Gewicht und Betriebskosten der gestellten Aufgabe gerecht wird.  
 30     Wie schon erwähnt, handelt es sich bei der Neuerung nur um eine mögliche Hilfestellung, um eventuell eine beabsichtigte Gewalttat abzuwenden. Ganz ausschließen lassen sich kriminelle Aktionen durch die Neuerung jedoch nicht.

Eine weitere sinnvolle Anwendungsmöglichkeit bietet sich in  
 35     Verbindung mit älteren Menschen an, die Naturgemäß High - Tech-Produkten nicht immer positiv gegenüber stehen und eine gewisse Scheu in der Handhabung entwickeln.

Komplizierte Handhabungen moderner Telekommunikations-einrichtungen u.a. - Handys - sind deshalb für alte Leute nicht wünschenswert.

- 5 Die Neuerung sieht deshalb vor, daß z.B. mit einem Tastendruck der gewünschte Gesprächspartner - Verwandte, Heimbetreuung oder auch der Arzt erreichbar ist.

- 10 Diese Aufgabe wird erfindungsmäßig dadurch gelöst, daß ein Telekommunikationsgerät in Handyform (ggf. kleiner) ausgebildet ist, das nur über einige Funktionen verfügt, die vorher ein-

- 15 programmierbar und bei Bedarf abrufbar sind. Mit der Neuerung ist nur der Gesprächspartner erreichbar, dessen Rufnummer vorher einprogrammiert und der entsprechenden Abruftaste zugeordnet ist. Weitergehende Gesprächs-  
verbindungen mit anderen Rufnummern sind ausgeschlossen. Das hat den Vorteil, das ungewünschte und überhöhte Telefonrechnungen vermeidbar sind.

- 20 Bei der Wahl der optischen Ausgestaltungsmöglichkeit bieten sich mehrere Alternativen an. So befinden sich am Gehäuse Befestigungsschlaufen, die eine Anbringung für ein Halsband ermöglichen. Weiterhin ist ein Befestigungsclip auf der Gehäuserückseite vorgesehen, um das Gerät z.B. an Taschen zu befestigen. In Verbindung mit einem Klettband bietet sich eine Befestigungsmöglichkeit als Armband an.

- 25 Das optische Erscheinungsbild des Gesamtgerätes ist der Zielgruppe : Kinder und Jugendliche angepasst.

Die Programmierung der erforderlichen Rufnummern erfolgt über ein Eingabefeld, das im Betriebszustand gegen Manipulationen gesichert ist.

- 30 Neben der einprogrammierten Rufnummernverbindung ist an eine Möglichkeit des örtlichen Sofortalarms gedacht. Eine spezielle Alarmtaste, die in dem Gehäuse integriert ist, löst bei Betätigung einen lautstarken Signalton aus. Damit eine unbeabsichtigte Auslösung des Alarms verhindert ist, befindet sich über der  
35 Alarmtaste eine Schutzfolie mit Sollbruchstellen, die nach Betätigung ausgewechselt werden muß.

Anhand der anliegenden Zeichnungen ist die Neuerung näher erklärt. Diese bedeuten im einzelnen :



Seite - 3 -

- Fig . 1 : zeigt die Neuerung frontseitig abgebildet mit den einzelnen Bedienungselementen.
- Fig. 2 : zeigt die Neuerung in Verbindung mit einem Halsband.
- Fig. 3 : zeigt die Neuerung in Verbindung mit einem Klettband zur Befestigung am Handgelenk.

Aichach, 24. März 1998

Seite - 4 -

Wolfgang Richard M A S T N A K  
Harthofstraße 19  
86551 Aichach / Untergriesbach

### BEZUGSZEICHENLISTE

- Fig. 1 :    10    Gehäusedarstellung  
             15    Schalter  
             20    Beschriftungsfeld  
             25    Beschriftungsfeld  
             30    Alarmtaste  
             35    Befestigungsösen für Halsband  
             40    Lautsprecher  
             45    Antenne  
             50    Ruftaste 1  
             55    Ruftaste 2  
             50    Mikrofon
- Fig. 2 :    10    Basisgerät  
             12    Halsband
- Fig. 3 :    10    Basisgerät  
             11    Klettband



Aichach, 24. März 1998

Seite - 5 -

Wolfgang Richard M A S T N A K  
Harthofstraße 19  
86551 Aichach / Untergriesbach

### S C H U T Z A N S P R Ü C H E

1. Mobiles Telekommunikationsgerät ( 10 ) mit festgelegten Funktionen, dadurch gekennzeichnet, daß im Betriebszustand nur die vorher gespeicherten und festgelegten Rufnummern per Tastendruck ( 50 + 55 ) abrufbar sind und desweiteren eine Alarmfunktion ( 30 ) abrufbar ist.
2. Mobiles Telekommunikationsgerät ( 10 ) mit festgelegten Funktionen, nach Anspruch 1., dadurch gekennzeichnet, daß die im Gerät gespeicherten und anwählbaren Rufnummern nur nach betätigen von autorisierten Sicherheitseinrichtungen änderbar ist, etwa durch die Eingabe von Sicherheits - Codes oder durch auswechseln einer entsprechenden Chip-Karte.
3. Mobiles Telekommunikationsgerät mit festgelegten Funktionen, nach den Ansprüchen 1.+2., dadurch gekennzeichnet, daß auf der Frontseite des Gerätes (10) mehrere Beschriftungsfelder ( 20 + 25 ) zur beliebigen Beschriftung ausgebildet sind, die den Ruftasten ( 50 + 55 ) zugeordnet sind.
4. Mobiles Telekommunikationsgerät mit festgelegten Funktionen, nach den Ansprüchen 1. - 3., dadurch gekennzeichnet, daß die Alarmtaste (30) durch eine Schutzfolie mit Sollbruchstellen gesichert ist.
5. Mobiles Telekommunikationsgerät mit festgelegten Funktionen, nach den Ansprüchen 1. - 4., dadurch gekennzeichnet, daß die Eingabetastatur zur Programmierung der gewünschten Rufnummern, sowie der Zugang zur Chip-Karte abschließbar ist.



31.03.98

Aichach, 24. März 1998

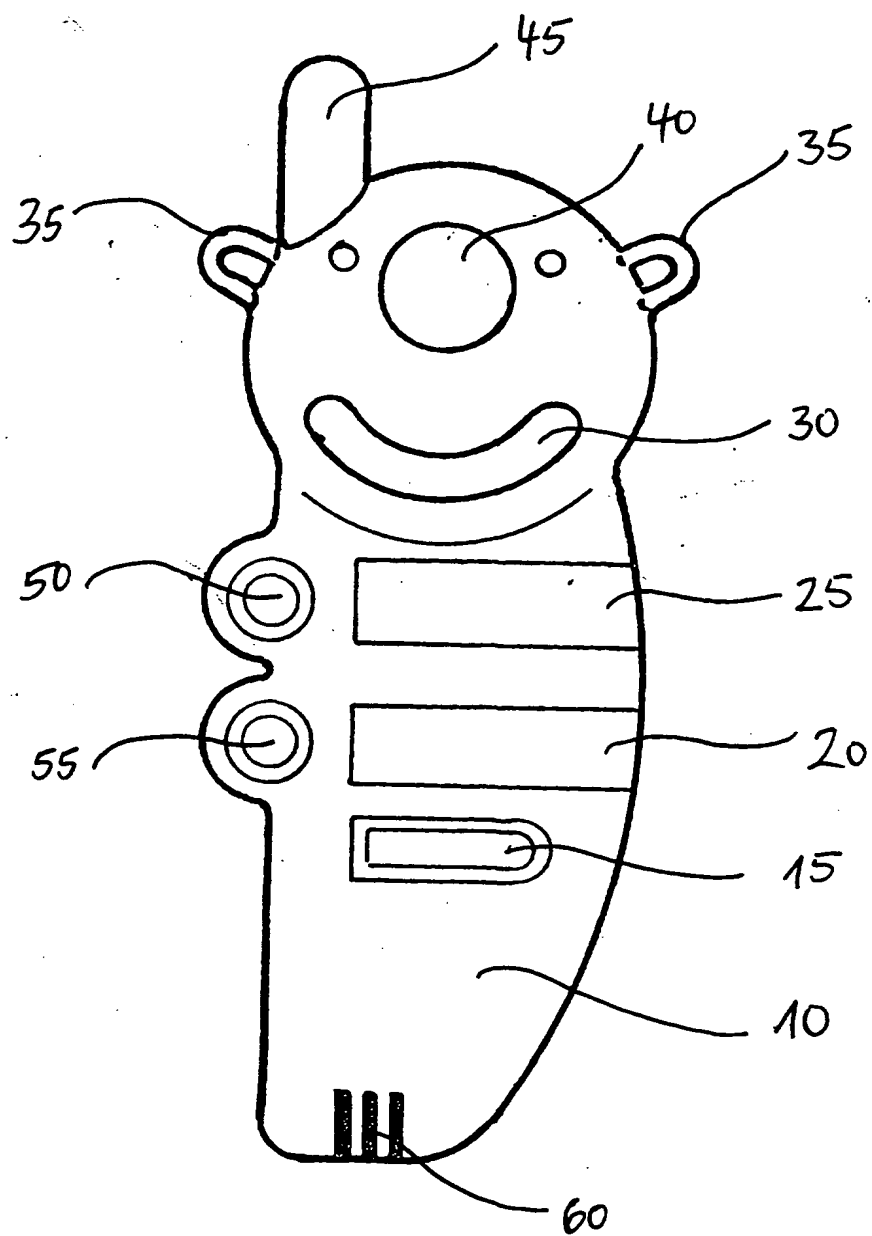
Seite - 6 -

Wolfgang Richard M A S T N A K  
Harthofstraße 19  
86551 Aichach / Untergriesbach

S C H U T Z A N S P R Ü C H E

6. Mobiles Telekommunikationsgerät mit festgelegten Funktionen, nach den Ansprüchen 1. - 5., dadurch gekennzeichnet, daß verschiedene Befestigungsmöglichkeiten für Tragemöglichkeiten am Körper des Anwenders ( 11 + 12 ) ausgebildet sind.
7. Mobiles Telekommunikationsgerät mit festgelegten Funktionen, nach den Ansprüchen 1. - 6., dadurch gekennzeichnet, daß auf den Beschriftungsfeldern ( ) eine Zahl verzeichnet ist und der Wählvorgang durch ein der Zahl entsprechendes ein - oder mehrmaliges Drücken der Wähltaste auslösbar ist.
8. Mobiles Telekommunikationsgerät mit festgelegten Funktionen, nach den Ansprüchen 1. - 7., dadurch gekennzeichnet, daß auf den Beschriftungsfeldern je eine Zahl verzeichnet ist und der Wählvorgang durch Drücken einer Wähltaste mit der entsprechenden Zahl auslösbar ist.

FIG. 1



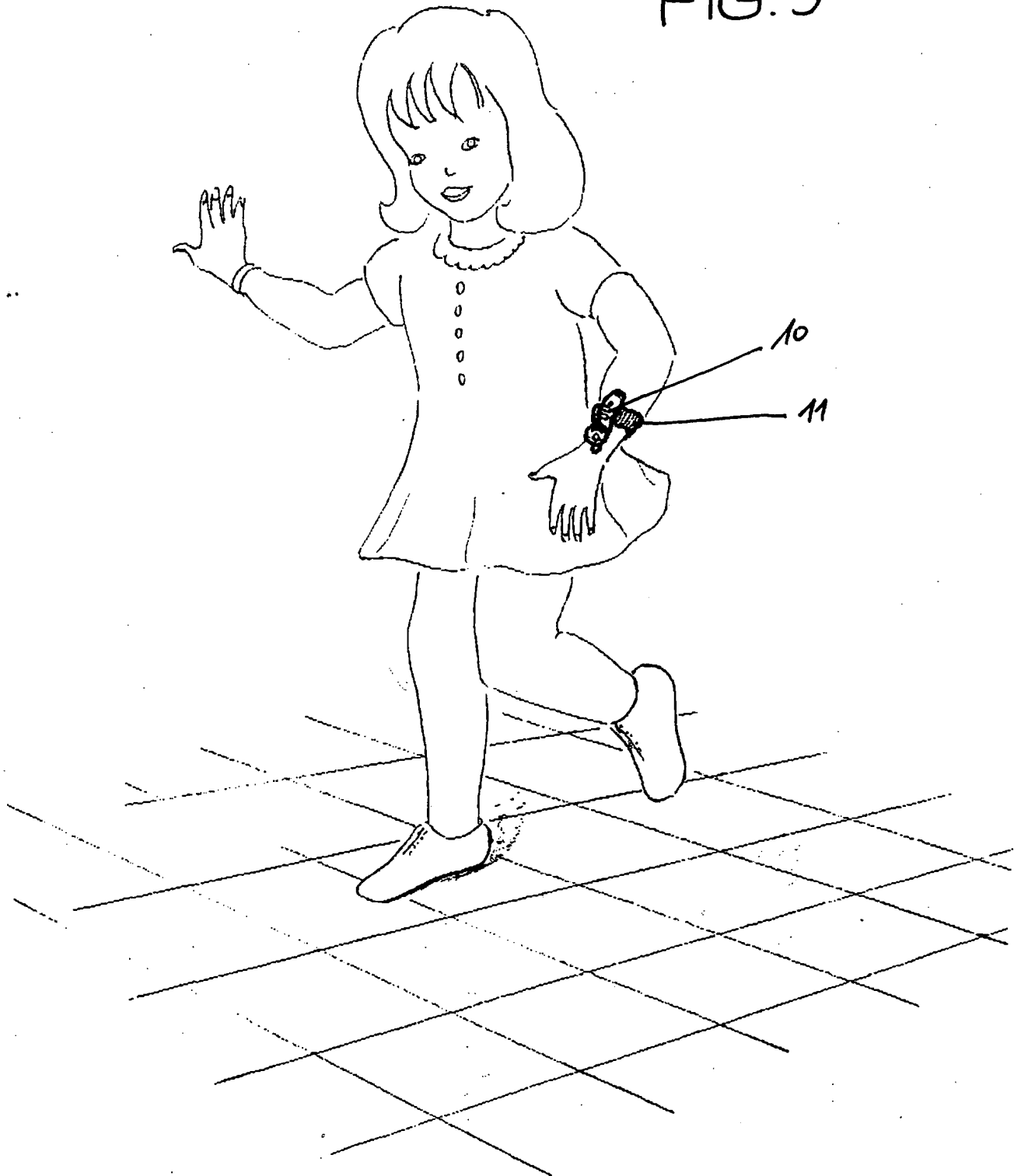
310300

FIG. 2



31.03.08

FIG. 3



(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



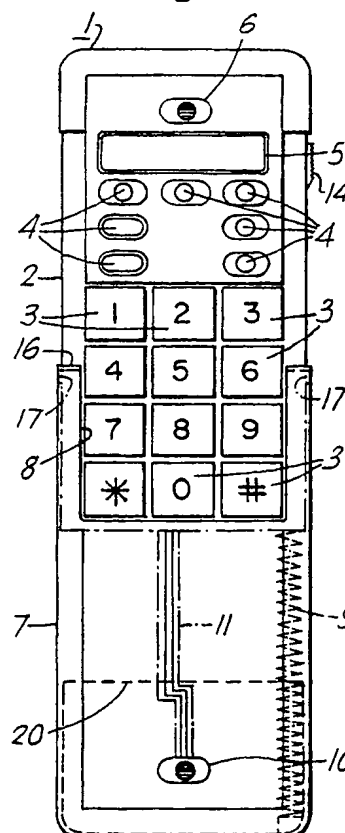
(11) Publication number:

**0 414 365 A2**

(12)

**EUROPEAN PATENT APPLICATION**(21) Application number: **90307619.8**(51) Int. Cl.<sup>5</sup>: **H04M 1/02, H04B 1/034**(22) Date of filing: **12.07.90**(30) Priority: **24.08.89 GB 8919215**(43) Date of publication of application:  
**27.02.91 Bulletin 91/09**(84) Designated Contracting States:  
**DE FR GB SE**(71) Applicant: **TECHNOPHONE LIMITED**  
**Ashwood House Pembroke Broadway**  
**Camberley Surrey GU15 3SP(GB)**(72) Inventor: **Martensson, Nils Erik**  
**Long Acre, Hook Heath Gardens**  
**Woking, Surrey GU22 0QG(GB)**(74) Representative: **Frain, Timothy John**  
**Technophone Limited Intellectual Property**  
**Manager Ashwood House Pembroke**  
**Broadway**  
**Camberley, Surrey GU15 3SP(GB)**(54) **Portable telephone.**

(57) A compact portable telephone comprises a housing (1) having a main body (2) and an extending sleeve-like portion (7) mounted for longitudinal slidable movement between a retracted position when not in use (see Figure 2), and an extended position (see Figure 1) for use. In a preferred arrangement, the earphone (6) is present in the main body (2) and the microphone (12) is in the extending portion (7). The telephone includes a plurality of buttons or keys (3,4) which can be selectively actuated for operating the telephone, and in one embodiment the extending portion (7) is adapted to conceal selected ones of the buttons or keys (3) when it is in the closed position to prevent accidental actuation of these buttons or keys.

**Fig.1.****EP 0 414 365 A2**

## PORTABLE TELEPHONE

This invention relates to a portable telephone, more particularly, a compact hand-held radio telephone.

There is a tendency nowadays for portable radio telephones to become increasingly lightweight and compact. However, as overall dimensions generally decrease, it has to be borne in mind that there is a critical minimum dimensional constraint on the separation of the microphone and the earphone imposed by the distance between the ear and the mouth of the human head, typically 15cm.

The US Motorola Corporation has recently launched a particularly compact portable cellular radio telephone, model No. 9800X, which comprises a main body and a hinged flap-like member housing the microphone. When the telephone is not in use, the hinged flap is folded flat against the main body of the telephone. In the folded position, the overall length of the telephone is only 16.2 cm approximately. In use, the flap is pivoted manually into an open position thereby establishing the optimum spacing between the earphone and the microphone for convenient use.

However, it is a disadvantage of that telephone that the hinged flap in which the microphone is contained is a light-weight, relatively flimsy member, which is prone to damage particularly when the microphone flap is open for use since it is then extremely susceptible to accidental knocks or other rough treatment. The hinged flap arrangement also presents the difficulty of implementing a reliable conductive path from the microphone to the main body of the telephone across the hinge. Furthermore, the hinged flap design does not lend itself readily to automation of the opening and closing mechanism.

Outside the area of portable (cordless) radio telephones, instruments are known which can be retracted when not in use. For example, US Patent No. 4,251,696 discloses a conventional fixed wire telephone instrument comprising three distinct housings. A first housing, which encloses an earphone, is secured to a second housing containing a dialer assembly. A third housing, enclosing a microphone, is slidably mounted within the first and second housings. Hence the second housing can be retracted when the telephone is not in use and extended for use.

US Patent No. 4,056,696 discloses a mobile radiotelephone (i.e. for installation within a vehicle) which includes a handset which is hard-wire connected to a control panel of the telephone. In this case the handset includes a telescoping bridge portion so that the handset can be stored in a

retracted position, but extended to an open position for use.

However the two prior art references cited above do not relate to a stand-alone self-contained portable (cordless) radio telephone and in neither case does the telephone housing enclose a transceiver.

According to the present invention there is provided a portable radio telephone comprising a housing enclosing transceiver means, said housing having a main body and an extending portion mounted for longitudinal slidable movement between a first position at which the main body and the extending portion are in a substantial overlapping relationship and a second position at which the extending portion extends from the main body, first transducer means being present in the main body and second transducer means being present in the extending portion.

In contrast with the prior art portable telephone with a hinged flap-like member discussed above, a portable telephone in accordance with the invention has the advantage that it enables the overall design to be both compact and relatively robust.

Furthermore, electrical connection from the transducer means in the extending portion to circuitry in the main body can be implemented in a reliable and straightforward manner. In one embodiment, for example, this connection is achieved using a flexible connector, especially a flexible printed circuit.

In a preferred embodiment, the first transducer means is an earphone and the second transducer means is a microphone. Thus it is the microphone, which is generally smaller and consumes less power than the earphone, which is provided in the extending portion. This is an advantageous configuration also because it is usual to have an antenna mounted close to the earphone. The provision of the antenna on the main body, rather than on the extending portion, avoids the need for a flexible connector to the antenna.

Preferably the housing comprises a plurality of buttons or keys which can be selectively actuated for operating the telephone, and the extending portion is adapted to conceal at least some of the buttons or keys when it is in the first position. Thus when the telephone is not in use the extending portion prevents the concealed keys from being actuated accidentally. Furthermore, this arrangement enables the telephone to have a much more aesthetically pleasing design and offers the advantage of operational synergy when opening or closing communication.

In a particular embodiment the extending por-

tion houses a battery for powering the telephone. The battery is usually a relatively heavy unit, and this arrangement has the advantage of distributing the weight over the whole telephone so that it has a balanced feel rather than being top heavy when in use.

Suitably the movement of the extending portion from the first position to the second position automatically produces an off-hook condition. Thus, for example, a simple switching means may be incorporated in the housing which produces the off-hook condition when the extending portion is moved to its second, extended position. To initiate an outgoing call the subscriber would be required to press an appropriate "SEND" button or key on the telephone main body, in the usual way. However, closing the extending portion to the first, retracted position will automatically produce the on-hook condition and so terminate a call in either the call receive or call send modes.

In one embodiment, means are provided which bias the extending portion towards the second, open position. Releasable locking means are included for retaining the extending portion in the first, retracted position, thus by releasing the locking means the extending portion will move automatically to the second, fully extended position. Alternatively, the extending portion may be driven by a motor actuated by a button or key on the outside of the housing.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is a plan view of a portable telephone in accordance with the invention showing the extending portion in the fully extended position, Figure 2 is a plan view of the telephone in Figure 1 showing the extending portion in the retracted position,

Figure 3 is a side elevation of the telephone in Figure 2 with the extending portion in the retracted position,

Figure 4a is a cross-section showing a detail of the microphone mounting in the telephone of Figures 1 - 3,

Figure 4b is a plan view of a printed circuit for connecting to the microphone of Figure 4a,

Figure 5 is a cross-section showing a detail of the main body and the extending portion of the telephone,

Figure 6 is a schematic block diagram showing the internal configuration of the telephone in Figure 2,

Figure 7 is a partly cut-away plan view of a different portable telephone in accordance with the invention showing the extending portion in the fully extended position, and

Figure 8 is a partly cut-away plan view of the

telephone in Figure 6 with the extending portion in the retracted position.

In the Figures, corresponding parts are denoted by the same reference numerals.

A hand portable cellular radio telephone is shown in Figures 1 - 3, which comprises a housing 1 having a main body 2 enclosing substantially the whole of the electronic circuitry of the telephone, as discussed in more detail below. The housing may be made of a plastics material, typically 2mm thick, or of a metal such as satin anodized aluminium whose thickness may be less than 0.5mm.

Included on the housing 1 are a first group of keys or buttons 3 labelled 1 - 9, 0, \*, and # arranged in an array of four rows and three columns, as is usual; and a second group of control keys or buttons 4 for selecting various predetermined functions such as memory storage, last number redial, call start (e.g. labelled "SEND"), etc, again as is usual. Within the housing 1 above the two groups of keys 3 and 4 there is a display panel 5, suitably a liquid crystal display for presenting information to the user, in conventional manner. Above the display 5 the main body 2 has a grille 6 behind which is mounted an earphone (not shown).

The housing 1 additionally comprises a sleeve-like portion 7 slidably mounted on the main body 2. The sleeve 7 has a U-shaped cut-out window portion 8 arranged so that all of the keys 3 and 4 are exposed when the sleeve is in its fully extended position as shown in Figure 1. When the sleeve 7 is retracted to its closed position, however, it covers the first group of keys 3, but leaves the second group of keys 4 exposed through the window 8 (see Figure 2). Hence, when the telephone is not in use and the sleeve 7 is closed (retracted) the control keys 4 can still be selected, but the numeric keys 3 cannot. The numeric keys 3 are thus protected from accidental actuation when the telephone is not in use.

The sleeve 7 has a grille 10 towards its lower end behind which is mounted a microphone 12. As shown in Figure 4a, the microphone 12 is fitted within a tube 13 of compressible material, eg. rubber, having flange 13a against which the front face of the microphone 12 abuts. The rubber tube 13 is push-fitted into a collar 7a formed integrally on the inside of the sleeve 7. The microphone 12 has two electrical contacts 12a and 12b on its rear side to which electrical connection is made by a flexible connector 11. The flexible connector is ideally a flexible printed circuit having a pair of conductive tracks 11a and 11b on a flexible substrate made of, for example a polyimide material, such as KAPTON (Trade Mark). A suitable track configuration for the flexible printed circuit is shown in Figure 4b in which the two narrow tracks 11a and 11b open into

larger area contact portions in the vicinity of microphone contacts 12a and 12b respectively. The microphone 12 is thus connected to the audio circuitry in the main body 2 of the telephone.

It is noted here that the microphone 12 may be connected to the audio circuitry by alternative means, such as conductive tracks present on the inside surface of the sleeve 7, a corresponding contact being provided in the main body 2 whereby the conductive track on the sleeve is arranged to provide sliding contact with the contact in the main body.

The sleeve 7 fits snugly round the main body 2 of the housing 1 such that only relatively gentle pressure is required to slide the sleeve relative to the main body 2. The sleeve 7 may simply bear against the main body 2 or additional bearing members may be incorporated to improve the sliding action. For example, an outwardly biased leaf spring (not shown) may be fastened to each side of the main body 2 so that the sleeve bears against the leaf spring surfaces rather than the sides of the main body 2; the leaf springs also being effective to take up any tolerance between the sleeve 7 and the main body 2.

As shown in Figure 1, a coil spring 9 is fixed between the bottom of the main body 2 and the internal bottom surface of the sleeve, which acts to bias the sleeve 7 into the open, fully extended position.

A locking mechanism in the form of an outwardly biased button 14 is provided on a side wall of the main body 2, which button is arranged to fit into a complementary aperture 15 on the side wall of sleeve 7 (see Figure 3) when the sleeve 7 is moved to the closed (retracted) position. Thus, simply by depressing the release button 14, the sleeve 7 will move automatically to the fully extended position under the action of spring 9.

After use, the sleeve 7 is pushed back by the user against the force of the spring 9, to the closed position where the button 14 engages in the aperture 15 and so locks the sleeve 7 in the retracted position. It is noted here that the microphone 12 remains connected to the audio circuitry in the main body 2 of the telephone at all times, despite the sliding motion, by virtue of the flexible connector 11. In the retracted position, the flexible connector 11 simply folds up within the sleeve 7.

Movement of the sleeve 7 is arrested at the fully extended position when a lip 16 on the internal top edge of sleeve 7 abuts a flange 17 provided integrally on the main body 2, as shown most clearly in Figure 5.

When the power is switched on the telephone is at all times capable of indicating (visually or audibly) when an incoming call is being addressed to the telephone. However, it is preferable for the

user not to be able to answer an incoming or make an outgoing call, i.e. the telephone is in the so-called "on hook" condition, when the telephone is in its retracted position. To this end a simple switching mechanism may be incorporated as illustrated in Figure 5. A contact 18 on the underside of lip 16 of sleeve 7 bridges a pair of contacts 19a and 19b on the top surface of the flange 17 of main body 2, but only when the sleeve 7 is in its fully extended position. Making the connection between contacts 19a and 19b enables the call answer/send mode (i.e. the telephone is "off hook") and breaking this connection disables the call answer/send mode (i.e. the telephone goes on hook). Hence, the telephone can only be used for making or answering a call when the sleeve is in its fully extended position. The action of closing the sleeve, after using the telephone, will therefore have the effect of terminating the call (regardless of whether it is an outgoing or incoming call). It is noted that since this present embodiment relates to a cellular telephone, an additional user operation may also be required to place a call, i.e. after entering the telephone number to be dialled, a SEND key (included among the control keys 4) may need to be depressed to activate the transmitter and to complete the call.

In the present embodiment a replaceable rechargeable battery 20 for powering the telephone is accommodated within the lowermost part of the sleeve 7. The battery 20 is relatively heavy and inclusion within the sliding sleeve has the beneficial effect of shifting the centre of gravity down the telephone towards the microphone as the sleeve 7 is extended for use. This results in the telephone having a balanced rather than a top-heavy feel. As shown in Figure 2 the uppermost part of the battery 20 extends into a cavity within the main body 2 of the housing 1 when the sleeve 7 is in its retracted position.

The main body 2 of the telephone encloses a transceiver 25 and all the necessary electronics 26 associated with telephone functions conventionally found in a cellular telephone, as shown schematically in Figure 6. A microprocessor 27 is also included to control all the basic functions of the telephone and to control the keypad and display functions, as is usual. Compact cellular telephone modules suitable for inclusion in the present telephone housing 1 are themselves already well-known in the art and indeed are commercially available, for example, such a compact module is used in the Applicant's handportable cellular telephone marketed in the UK as the TECHNAPHONE TP2 (Trade Mark), and hence no further details will be given here.

The telephone would also include an antenna, typically a fixed external antenna 28 extending



from the top of the housing in the vicinity of the ear piece. On the other hand, the antenna may be a retractable version which may be arranged to extend automatically when the sleeve 7 is extended for use. A manually extendible tape antenna suitable for this purpose is disclosed, for example in our US patent No. 4,920,352. Alternatively, the antenna need not physically extend from the telephone but may, for example, be embedded in or otherwise attached to the material of the housing 1.

A different telephone in accordance with the invention is illustrated in Figures 7 and 8. In this embodiment the sleeve 7 is mounted to slide inside the main body 2. However, the main body 2 comprises a window 21 exposing the buttons or keys 3 and 4. The front face 7b of sleeve 7 is arranged to slide directly beneath the window 21 to conceal the buttons or keys 3 when the sleeve is in the retracted position as shown in Figure 8.

Also, in this case the sleeve 7 is driven under the action of a motor 22 mounted within the main body 2. The motor turns, via a worm wheel (not shown), a screw 23 which is fastened rotatably to the bottom of the sleeve 7. Thus the sleeve is opened and closed as the screw 23 is driven back and forth by the motor 22. The motor mechanism may be actuated by depressing a pre-determined one of the buttons or keys 4 which may be suitably labelled.

In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention defined in the following claims. For example, rather than leaving selected keys exposed when in the retracted state, the sleeve 7 may alternatively cover all of the keys and so prevent their accidental actuation.

Finally, it is noted that the invention is not limited to portable radiotelephones operable on conventional cellular radio telephone systems, but applies also to a portable cordless telephone operable for example on the discrete area system known in the UK as Telepoint or CT2, or on the proposed 1.8 GHz Personal Communications Network systems.

## Claims

1. A portable radio telephone comprising a housing enclosing transceiver means, said housing having a main body and an extending portion mounted for longitudinal slidable movement between a first position at which the main body and the extending portion are in a substantial overlapping relationship and a second position at which the extending portion extends from the main body, first transducer means being present in the main body and second

transducer means being present in the extending portion.

2. A portable radio telephone as claimed in claim 1, wherein the main body of the housing encloses the transceiver means.

3. A portable radio telephone as claimed in claim 1, or claim 2, wherein the second transducer means is electrically connected by a flexible connector to audio circuitry in the main body.

4. A portable radio telephone as claimed in claim 3, wherein the flexible connector comprises a printed circuit on a flexible substrate.

5. A portable radio telephone as claimed in any of the preceding claims, wherein the first transducer means is an earphone and the second transducer means is a microphone.

6. A portable radio telephone as claimed in any of the preceding claims, including a keypad which comprises a plurality of buttons or keys which can be selectively actuated for operating the telephone, and the extending portion is adapted to conceal at least some of the buttons or keys when it is in the first position.

7. A portable radio telephone as claimed in any of the preceding claims wherein the extending portion accommodates a battery for powering the telephone.

8. A portable telephone as claimed in any of the preceding claims, wherein movement of the extending portion to the second position automatically produces an off-hook condition in the telephone.

9. A portable radio telephone as claimed in any of the preceding claims, wherein movement of the extending portion from the second position automatically produces an on-hook condition in the telephone.

10. A portable radio telephone as claimed in any of the preceding claims, further comprising means for driving the extending portion between the first and second positions, and a button or key on the housing for actuating the driving means.

11. A portable radio telephone as claimed in any of claims 1 to 9, including means which bias the extending portion towards the second position, releasable locking means being included for retaining the extending portion in the first position.

Fig.1.

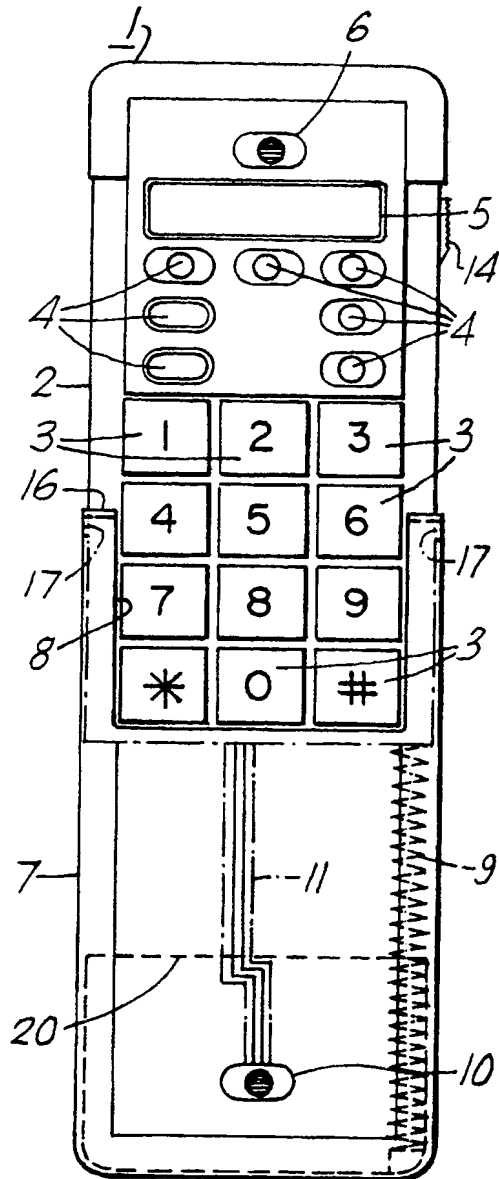


Fig.2.

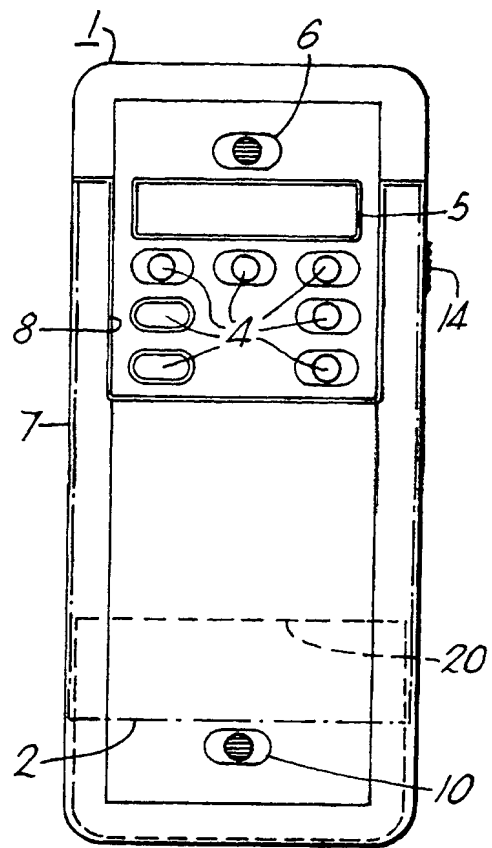


Fig.3.

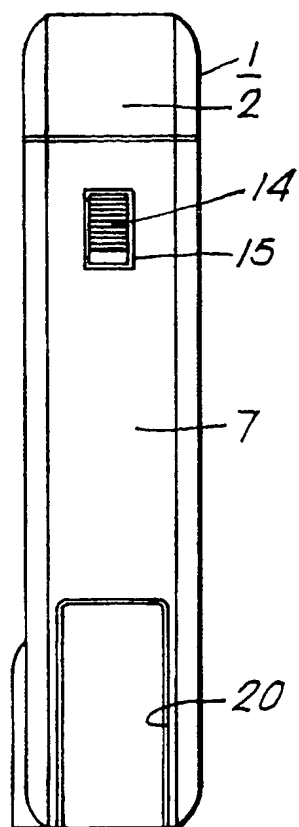


Fig.4A.

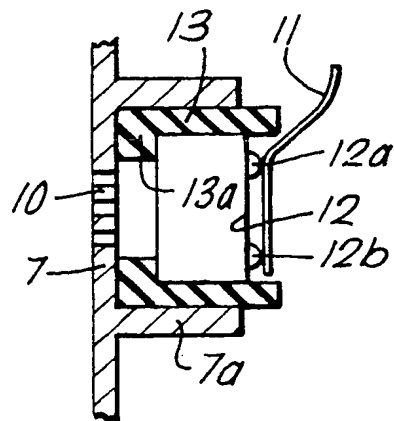


Fig.4B.

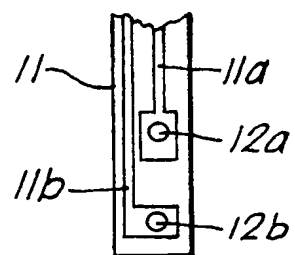


Fig.5.

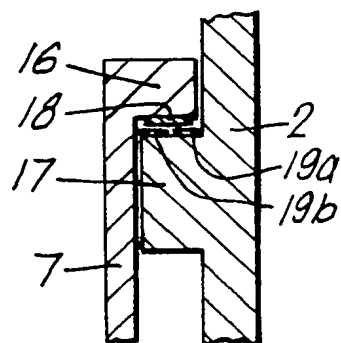


Fig.6.

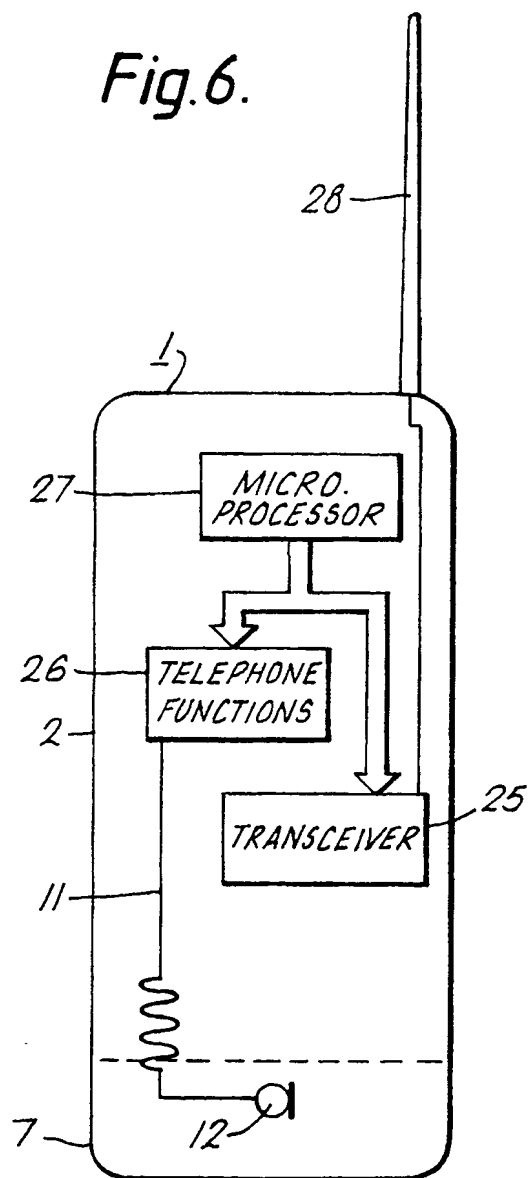


Fig.7

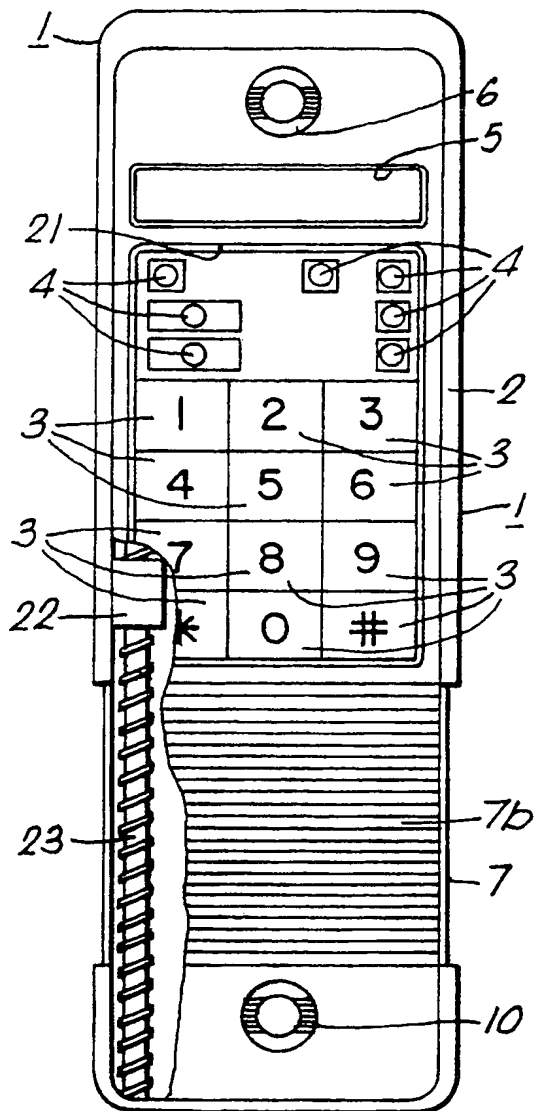
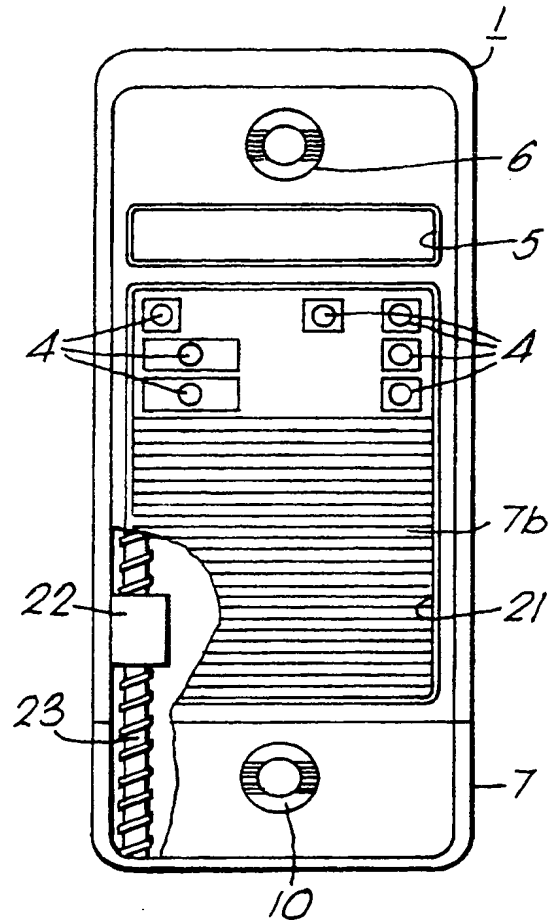


Fig.8.





(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



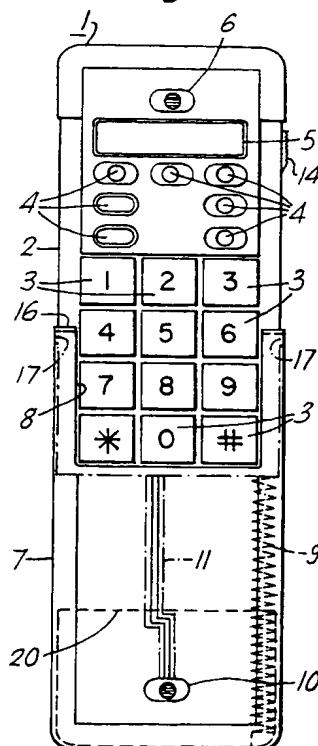
(11) Publication number:

**0 414 365 A3**

(12)

**EUROPEAN PATENT APPLICATION**(21) Application number: **90307619.8**(51) Int. Cl.<sup>5</sup>: **H04M 1/02, H04B 1/034**(22) Date of filing: **12.07.90**(30) Priority: **24.08.89 GB 8919215**(43) Date of publication of application:  
**27.02.91 Bulletin 91/09**(84) Designated Contracting States:  
**DE FR GB SE**(88) Date of deferred publication of the search report:  
**22.07.92 Bulletin 92/30**(71) Applicant: **TECHNOPHONE LIMITED**  
**Ashwood House Pembroke Broadway**  
**Camberley Surrey GU15 3SP(GB)**(72) Inventor: **Martensson, Nils Erik**  
**Long Acre, Hook Heath Gardens**  
**Woking, Surrey GU22 0QG(GB)**(74) Representative: **Frain, Timothy John**  
**Technophone Limited Intellectual Property**  
**Manager Ashwood House Pembroke**  
**Broadway**  
**Camberley, Surrey GU15 3SP(GB)**(54) **Portable telephone.**

(57) A compact portable telephone comprises a housing (1) having a main body (2) and an extending sleeve-like portion (7) mounted for longitudinal slidable movement between a retracted position when not in use (see Figure 2), and an extended position (see Figure 1) for use. In a preferred arrangement, the earphone (6) is present in the main body (2) and the microphone (12) is in the extending portion (7). The telephone includes a plurality of buttons or keys (3,4) which can be selectively actuated for operating the telephone, and in one embodiment the extending portion (7) is adapted to conceal selected ones of the buttons or keys (3) when it is in the closed position to prevent accidental actuation of these buttons or keys.

*Fig.1.***EP 0 414 365 A3**



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

EP 90 30 7619

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
P, X	DE-A-3 836 406 (ROBERT BOSCH G.M.B.H.)  * column 1, line 67 - column 2, line 63; claims 1,4-6; figures 3,4 * ---	1,2,5,6, 8,9	H04M1/02 H04B1/034
X	FR-A-2 593 656 (PARIENTI RAOUL)  * page 4, line 33 - line 39; figures 3-5,10-13 * * page 7, line 40 - page 8, line 1 * * page 7, line 13 - line 17 * ---	1,2,5,6, 8,9	
X	DE-A-3 323 858 (BRANDENSTEIN, ERWIN) * page 16, line 6 - line 28; claim 14; figures 11,12 * * page 12, line 1 - line 6 * ---	1,5,6	
A	US-A-4 272 655 (MACKENZIE)  * column 1, line 5 - line 9; claims 1-3,5,8-10,14,15; figures 1,8 * * column 2, line 7 - column 3, line 6 * * column 3, line 42 - column 5, line 22 * * column 10, line 15 - line 32 * ---	1,5,6,8, 9	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	US-A-4 291 202 (ADAMS ET AL.) * column 1, line 5 - line 7; claims 1,2,15-17; figures 6-9 * * column 1, line 25 - line 58 * -----	4	H04M H04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 MAY 1992	Examiner DE HAAN A. J.
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- Δ : member of the same patent family, corresponding document	